

**REMARKS**

Claims 1-20 were originally filed in the present application.

Claims 1-20 are pending in the present application.

Claims 1-20 were rejected in the November 1, 2005 Office Action.

No claims have been allowed.

Claims 1-20 remain in the present application.

Reconsideration of the claims is respectfully requested.

In Section 2 of the November 1, 2005 Office Action, the Examiner indicated that the Office had withdrew the obviousness rejection from the previous Office Action dated April 19, 2005 for some of the claims. Applicants thank the Examiner for this withdrawal and traverse the rejection and the Examiner's supporting arguments with respect to the remaining claims.

As the Office will recall, the previous Office Action dated April 19, 2005 rejected Claims 1-20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,091,733 to *Takagi, et al.* (the "Takagi I reference") in view of U.S. Patent No. 6,272,148 to *Takagi, et al.* (the "Takagi II reference"). In the present Office Action, the Examiner argues that the claims do not recite whether the first maximum transmission unit size and the second maximum transmission unit size are of different sizes when directed in a particular direction. Applicants disagree and note that independent Claim 1, for example, discretely claims a *first* maximum transmission unit size for intercepted traffic forwarded to the packet network and a *second* maximum transmission unit size for intercepted traffic

forwarded to the wireless link. Claim 1 thus clearly indicates that there are two *distinct* maximum transmission unit sizes.

In addition, although Claim 1 is silent with regards to the *magnitudes* of the first maximum transmission unit size and the second maximum transmission unit size *with respect to each other*, Claim 1 clearly distinguishes between the two maximum transmission unit sizes by reciting the differences in the *relative direction* of data transmission for each of the two maximum transmission unit sizes. For example, the first maximum transmission unit size is used specifically for intercepted traffic *forwarded to the packet network*. The second maximum transmission unit size, on the other hand, is used for specifically for intercepted traffic *forwarded to the wireless link*. Thus, the packet relay controller recited in Claim 1 re-formats the intercepted traffic between the wireless link and the packet network regardless of whether traffic is flowing from the wireless link to the packet network *or* from the packet network to the wireless link.

Contrary to the Examiner's assertions, the Takagi I reference and the Takagi II reference, taken individually or in combination, fail to disclose such a system. As argued in Applicants' previous response dated August 19, 2005, the Takagi I reference discloses a system directed to *unidirectional* transfers of data packets from *a server terminal to a client terminal* in an asymmetric access network in which the bandwidth from server terminals to client terminals is much wider than the bandwidth from client terminals to server terminals. The Takagi I reference, column 3, lines 20-65. The Takagi I reference teaches: (1) *receiving* TCP segments having a first size on a network interface; and (2) *outputting* TCP segments having a larger size on to a client interface. *Id.* at column

3, lines 36-46. The Takagi I reference and the Takagi II reference, however, fail to disclose, teach or suggest, for example, transmitting TCP segments *transmitted to the network from the network interface* or any disclosure, teaching or suggestion of the size of such TCP segments *transmitted to the network from the network interface*. Accordingly, there is no teaching or disclosure within the Takagi I reference or the Takagi II reference of a first maximum transmission unit size for *intercepted traffic forwarded to the packet network* and a second maximum transmission unit size for intercepted traffic forwarded to the wireless link, as required by Claim 1.

Moreover, there is no suggestion or motivation within the Takagi I reference or the Takagi II reference to combine discrete elements from these references and then *seek out* still other discrete elements as required by Claim 1 and ultimately by its dependants Claims 2-7. Similar arguments hold true for independent Claims 8 and 15 and its dependants Claims 9-14 and 16-20, respectively. Accordingly, Applicants maintain that the previous §103 rejection in the April 19, 2005 Office Action has been overcome in full and respectfully request the withdrawal of the rejection in its entirety.

In Section 4 of the November 1, 2005 Office Action, the Examiner rejected Claims 1, 3-8 and 10-14 under 35 U.S.C. §103(a) as being unpatentable over Takagi I reference in view of the Takagi II reference. Applicants respectfully disagree. In light of the arguments made above in support of the allowance of independent Claims 1 and 8 and their dependants. Accordingly, Applicants respectfully request favorable reconsideration of the §103 rejection and the allowance of Claims 1, 3-8 and 10-14.

In Section 6 of the November 1, 2005 Office Action, the Examiner rejected Claims 1-4, 6-11, 13 and 14 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,212,190 to *Mulligan, et al.* (the “Mulligan reference”) in view of “Adaptive Frame Length Control for Improving Wireless Link Throughput, Range and Energy Efficiency” to *Lettieri, et al.* (the “Lettieri reference”). Applicants respectfully disagree.

The Mulligan reference discloses a system for generating packets for transmission over different routes on a network. Mulligan reference, Abstract & column 4, lines 13-19. Initially, the Mulligan reference teaches determining a maximum transmission unit (MTU) capable of being transmitted over a predetermined route. *Id.* at column 4, lines 19-23. The Mulligan reference goes on to teach that the size of each packet to be transmitted over the network is compared with the MTU size. *Id.* If the packet size is larger than the MTU, the Mulligan reference teaches that the packet is processed further before it is transmitted over the route. *Id.* at column 4, lines 23-25. The additional processing taught by the Mulligan reference initially divides the total number of transmission units contained within the packet by the MTU value. *Id.* at column 4, lines 25-28. The result of the division is temporarily stored in a DCOUNT storage unit and the remainder stored in a RCOUNT storage unit. *Id.* at column 4, lines 28-30. If the remainder stored in RCOUNT is non-zero, the value in DCOUNT is incremented by one. *Id.* at column 4, lines 30-32. The DCOUNT value indicates the minimum number of datagrams for sending a packet using the present technique. *Id.* at column 4, lines 32-34. Next, the Mulligan reference teaches that the transmission units contained in the original packets are redistributed equally into DCOUNT packets and prepared for transmission

over the network route. *Id.* at column 4, lines 34-37. The Mulligan reference, however, fails to disclose a second maximum transmission unit size for intercepted traffic forwarded to the wireless link, as required by Claims 1 and 8.

The Lettieri reference, on the other hand, discloses the impact of media access control (MAC) layer frame lengths (which correspond to the maximum transmission unit (MTU)) transmitted through a wireless link. The Lettieri reference, p. 564, second column. The Lettieri reference specifically assesses such factors as user-seen throughput, range and energy efficiency on MAC layer frame lengths. *Id.* The Lettieri reference goes on to disclose a system in which the use of *variable frame lengths* provides improved service to the wireless user and interoperability with existing Internet protocol layers. *Id.* The Lettieri reference specifically teaches making the MTU a variable parameter and thus implements an adaptive frame length control for wireless network interface cards. *Id.* Thus, the Lettieri reference teaches *away* from a packet relay controller that re-formats the intercepted traffic between a wireless link and a packet network to employ *a first maximum transmission unit size* for intercepted traffic forwarded to the packet network and *a second maximum transmission unit size* for intercepted traffic forwarded to the wireless link, as required by Claim 1.

Accordingly, neither the Mulligan reference or the Lettieri reference, taken individually or in combination, teaches or makes obvious, for example, a packet relay controller intercepting traffic between the wireless link and the packet network and re-formatting the intercepted traffic to employ *a first maximum transmission unit size* for intercepted traffic forwarded to the packet network and *a second maximum transmission unit size* for intercepted traffic forwarded to the wireless link, as

required by Claims 1 and 8. Moreover, there is no suggestion or motivation within the Mulligan reference or the Lettieri reference to prompt one of ordinary skill to selectively and non-inventively combine and then seek out still other discrete elements as also required by Claims 1 and 8. Claims 1 and 8, and their dependants Claims 2-4, 6 and 7 and Claims 11, 13 and 14, respectively, therefore contain unique and non-obvious limitations over the art cited and are thus patentably distinguishable. Accordingly, Applicants respectfully request favorable reconsideration of Claims 1-4, 6-11, 13 and 14 and the withdrawal of the §103 rejection.

In Section 7 of the November 1, 2005 Office Action, the Examiner rejected Claims 2, 4, 9, 11 and 15-20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,721,334 to *Ketcham* (the “Ketcham reference”) in view of U.S. Patent No. 6,728,365 to *Li, et al.* (the “Li reference”). Applicants respectfully disagree.

The Ketcham reference discloses a method for creating an aggregate packet in a packet-based network. The Ketcham reference, column 2, lines 35 & 36. If a network supports aggregate packets, the Ketcham reference teaches starting a timer to wait a predetermined period for such packets. *Id.* at column 2, lines 38-41. If no packets suitable for creating an aggregate packet are received before the timer expires, the Ketcham reference teaches that the packet is normally sent through the packet-based network. *Id.* at column 2, lines 42-44. The Ketcham reference thus fails to disclose a second maximum transmission unit size for intercepted traffic forwarded to the wireless link, as required by Claims 1 and 8 and ultimately required by Claims 2 and 4 and Claims 9 and 11, respectively. The Ketcham reference also fails to disclose intercepting traffic from a wireless link to the packet

network; re-formatting the intercepted traffic to employ a first maximum transmission unit size different than a second maximum transmission unit size of the intercepted traffic; and forwarding the re-formatted traffic to the packet network, as required by Claim 15 and ultimately by Claims 16-20.

The Li reference, on the other hand, discloses a system for extending Resource Reservation Protocol (RSVP) signaling and other wire line quality-of-service (QoS) signaling schema to be applied to wireless applications. The Li reference, column 2, lines 1-7. The Li reference teaches intercepting all QoS messages to or from a mobile terminal served by a wireless network, modifying the contents of the QoS message to reflect the constraints of the wireless network and checking if an existing wireless traffic channel satisfies the wireless network parameters sought. *Id.* at column 2, lines 45-62. If the wireless traffic channel does not satisfy the network parameters sought, the Li reference teaches coordinating the establishment of a wireless traffic channel which satisfies the parameters sought. *Id.* at column 2, lines 62-64. The Li reference thus fails to disclose *a second maximum transmission unit size* for intercepted traffic forwarded to the wireless link, as required by Claims 1 and 8 and ultimately required by Claims 2 and 4 and Claims 9 and 11, respectively. The Li reference also fails to disclose intercepting traffic from a wireless link to the packet network; re-formatting the intercepted traffic to employ a first maximum transmission unit size different than a second maximum transmission unit size of the intercepted traffic; and forwarding the re-formatted traffic to the packet network, as required by Claim 15 and ultimately by Claims 16-20.

Accordingly, neither the Ketcham reference or the Li reference, taken individually or in combination, teaches or makes obvious, for example, a packet relay controller *intercepting traffic*

*between the wireless link and the packet network* and re-formatting the intercepted traffic to employ a *first maximum transmission unit size* for intercepted traffic forwarded to the packet network and a *second maximum transmission unit size* for intercepted traffic forwarded to the wireless link, as required by Claims 1 and 8 and ultimately required by Claims 2 and 4 and Claims 9 and 11. In addition, neither the Ketcham reference or the Li reference, taken individually or in combination, teaches or makes obvious, for example, *intercepting traffic from a wireless link to the packet network*; re-formatting the intercepted traffic to employ a *first maximum transmission unit size* different than a *second maximum transmission unit size* of the intercepted traffic; and *forwarding the re-formatted traffic to the packet network*, as required by Claim 15 and ultimately by Claims 16-20.

Moreover, there is no suggestion or motivation within the Mulligan reference or the Lettieri reference to prompt one of ordinary skill to selectively and non-inventively combine and then *seek out* still other discrete elements as required by Claims 1, 8 and 15. Claims 1, 8 and 15, and their dependants Claims 2 and 4, Claims 9 and 11 and Claims 16-20, respectively, therefore contain unique and non-obvious limitations over the art cited and are thus patentably distinguishable. Applicants thus respectfully request favorable reconsideration of Claims 2, 4, 9, 11 and 15-20 and the withdrawal of the §103 rejection.

In Section 9 of the November 1, 2005 Office Action, the Examiner rejected Claims 1, 3, 5-8, 10 and 12-14 under 35 U.S.C. §102(e) as being anticipated by the Ketcham reference. Applicants respectfully disagree.

As argued above, the Ketcham reference fails to disclose or teach, for example, a *second*



*maximum transmission unit size for intercepted traffic forwarded to the wireless link*, as required by Claims 1 and 8 and ultimately by their dependants, Claims 3 and 5-7 and Claims 10 and 12-14, respectively. Claims 1, 3, 5-8, 10 and 12-14 are thus patentably distinguishable. Applicants therefore request favorable reconsideration and withdrawal of the §102 rejection.

**SUMMARY**

For the reasons given above, the Applicants respectfully request reconsideration and allowance of the pending claims and that this application be passed to issue. If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at *jmockler@davismunck.com*.

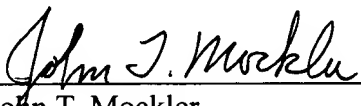
The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

DAVIS MUNCK, P.C.

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P.O. Drawer 800889  
Dallas, Texas 75380  
Phone: (972) 628-3600  
Fax: (972) 628-3616  
E-mail: *jmockler@davismunck.com*

  
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John T. Mockler  
Registration No. 39,775